

THREE NEW SPECIES OF THE GENUS MACROSTELAS FROM CHINA (HEMIPTERA, CICADELLIDAE, EUSCELINAE)

DAI Ren-Huai^{1, 2}, LI Zi-Zhong¹, CHEN Xue-Xin²

1. Institute of Entomology, Guizhou University, Guiyang 550025, China

2. Department of Plant Protection, Zhejiang University, Hangzhou 310029, China

Abstract In this paper, three new species of genus *Macrostelus* Fieber, *M. tibetensis* sp. nov., *M. latiaedeagus* sp. nov. and *M. bimaiculatus* sp. nov. are described from China. Type specimens are deposited in the Institute of Entomology, Guizhou University, Guiyang, China.

Key words Hemiptera, Cicadellidae, Euscelinae, *Macrostelus*, new species.

Fieber (1866) erected the genus *Macrostelus*. Eighty species of the genus have been reported worldwide and fourteen species are from China. Three new species of *Macrostelus* (*Macrostelus tibetensis* sp. nov., *M. latiaedeagus* sp. nov. and *M. bimaiculatus* sp. nov.) are described in the present paper. Type specimens are deposited in the Institute of Entomology, Guizhou University, Guiyang, China.

1 *Macrostelus tibetensis* sp. nov. (Figs 1–7)

Body length (including tegmen) male 3.1–3.4 mm.

Crown and face black, the common boundary crown and face with transverse stripe yellowish brown, the anterior margin of crown midline area with filemot stripe; ocelli yellowish brown, eyes black, antennae brown, the upside of antennal ledges to ocelli with pale yellow streak; antedypeus area black brown. Pronotum and scutellum black, pronotum near to compound eyes with two filemot spots, scutellum with basolateral side and apical pale yellow; forewings black brown, veins color same as wings; thorax venter black, legs dirty filemot except coxae and base of spurs black brown. Abdomen black, lateral margin pale yellow, genitalia segment black brown, the apex scorch.

Head equal in width to pronotum (Fig. 1), anterior margin broadly rounded in dorsal aspect, vertex with ratio of length to width between eyes 1.3:2.0, ocelli located on anterior margin of vertex, visible dorsally, distance between eye and ocellus longer than diameter of ocellus. Pronotum slightly longer than vertex, its anterior margin slightly arched, posterior margin shallowly concave, scutellum triangular, median length approximately equal length of vertex; forewings elongate, exceed the end of abdomen, without outer apical cell, base of inner apical cell open, with 4 apical cells, appendix wide.

Male genitalia. Outer margin of pygofer side

(Fig. 7) with a row of setae, its ventro-laterally margin with thick setae, with a process in middle-posterior part, marginal serrated; subgenital plates (Fig. 5) base broad, narrowed gradually to curve apex, with a single continuous row of long setae ventro-laterally, outer margin of apical serrated; aedeagus (Figs. 2–3) shaft elongate, apex third with two fork-shape projections; connective (Fig. 6) Y-shaped, its stem and arms of approximately equal length; style (Fig. 4) base flat wide and finger-like apex, the end dentated.

Holotype ♂, Lasa (29.39°N, 90.08°E), Xizang, China, 3700 m, 7 Aug. 1998, collected by LI Zi-Zhong. Paratypes 6 ♂♂, same data as holotype.

Remarks. This new species is similar to *M. heiseles* Kuch, but it can be distinguished from the latter by body smaller; subgenital plates base broad, narrowed gradually to curve apex, outer margin of apical serrated, aedeagus shaft elongate, apex third with two fork-shape projections.

Etymology. Named after type locality.

2 *Macrostelus latiaedeagus* sp. nov. (Figs 8–14)

Length of body (including tegmen) 4.1–4.4 mm (male) or 4.3–4.5 mm (female).

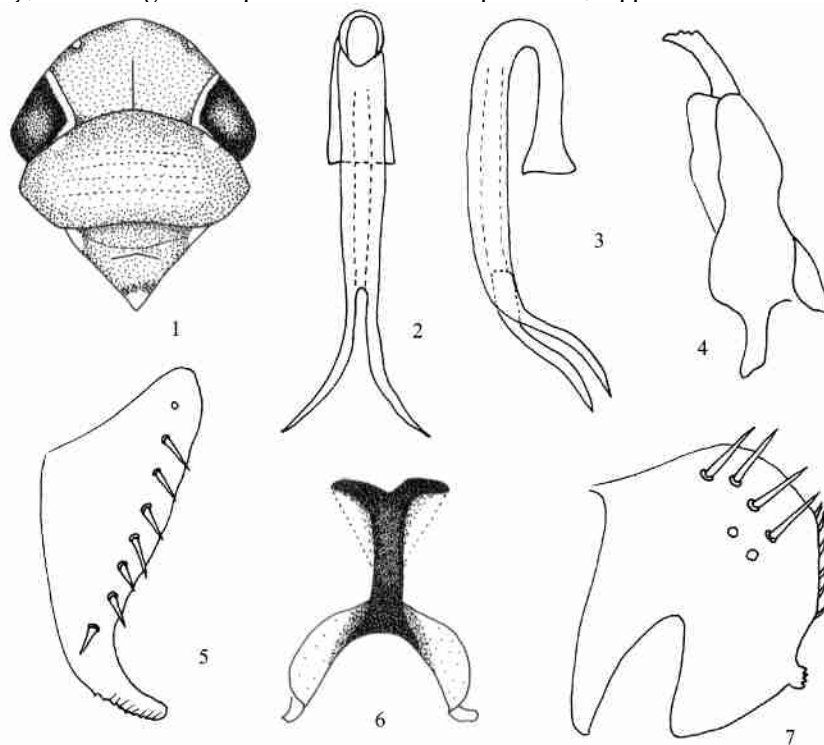
Crown and pronotum pale yellow, median longitudinal carina of crown, with 2 rounded big spots in the anterior area, each side of midline with 2 transversely short striated, 2 rounded spots in basally, near to eyes with 2 oblique short stripes black; compound eyes black brown, ocelli yellow; median longitudinal carina of face, both side crossband, frons suture, clypeal suture and proboscis black brown; antennae fulvous. Scutellum pale yellow, its basolateral side with 2 triangle spots and transverse depression black; forewings yellowish brown, outer margin and around middle pale yellow, veins color same as wings; hindwings pale white, veins yellowish brown; legs pale yellow, base of spurs and thorax black

The project was supported by the National Natural Science Foundation of China (30270176) and partly by Person with Ability Foundation of Guizhou University.

Received 25 May 2007, accepted 26 Oct. 2007.

brown. Abdomen black, the edge yellow.

Head equal in width to pronotum (Fig. 8), anterior margin obtusely produced forward, vertex with ratio of length to width between eyes 0.7: 1.1; distance between eye and ocellus about as long as diameter of ocellus; frontoclypeus long and narrow, anteclypeus oblong, lightly widened basally, the edge of apex arched.



Figs 1-7. *Macrosteles tibdensis* sp. nov. male, holotype. 1. Head and thorax, dorsal view. 2. Aedeagus, ventral view. 3. Aedeagus, lateral view. 4. Style, dorsal view. 5. Subgenital plate, ventral view. 6. Connective, ventral view. 7. Pygofer side, ventral view.

Male genitalia. Outer margin of pygofer side (Fig. 10) broad round, with a list of setae, its middle-posterior margin with a projection which have setae, with a group of thick setae ventro-laterally; subgenital plates (Fig. 14) with a row of setae ventro-laterally, and the apex extend to nipple-shaped process; connective (Fig. 13) Y-shaped, its stem and arms of approximately equal length; style (Fig. 9) long and thick; aedeagus (Figs. 11-12) broad, cannular curved basally, apex with paired fork-shape projections broad, apical pointed.

Female is similar to male in color, but abdomen dirty yellow ventrally.

Holotype ♂, Zalanun (48° N, 122.47° E), Neimenggu, China, 1100 m, 26 Aug. 1996, collected by LI Zi Zhong. Paratypes: 5 ♀ ♀, same data as holotype; 1 ♂, 1 ♀, Xining (36.38° N, 101.48° E), 27 Aug. 1997, Qinghai, China, 2250 m, collected by LI Zi Zhong.

Remarks. This new species is similar to *M. vilbasta* Hamilton, but can be distinguished from the latter by body larger; aedeagus broad, cannular curved basally,

Pronotum slightly longer than vertex, ratio of length to width about 1.0: 2.3, its anterior margin rounded and posterior margin shallowly concave, laterally margin short and round; scutellum short, transverse depression flat and straight, which located central section; forewings elongate, exceed the end of abdomen, translucence, with 4 apical cells, appendix wide.

apex with paired fork-shape projections broad.

Etymology. From “latr”, “broad”, the specific epithet refers to aedeagus broad, apex with paired fork-shape projections broad.

3 *Macrosteles bimaculatus* sp. nov. (Figs. 15-22)

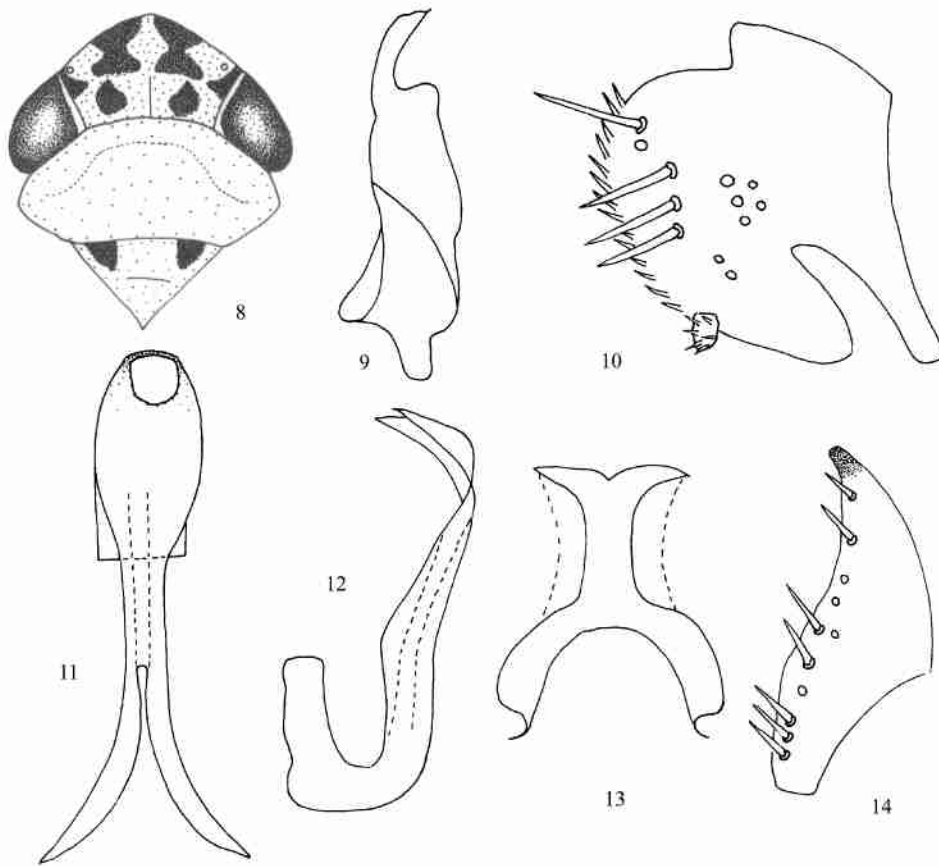
Length of body (including tegmen) 3.8-4.1 mm (male) or 4.5-4.8 mm (female).

Crown pale yellow, the apical area and 2 rounded spots in basally black, median longitudinal carina brown; ocelli pale yellow, eyes black brown, face yellowish brown, median longitudinal carina, frontoclypeus both side crossband, frontal suture, clypeal suture and proboscis black brown; antennae yellowish brown. Pronotum pale yellow, the anterior margin with 4 black speckles; scutellum pale yellow, with black transverse depression and near to its baso-lateral side with 2 triangle dark spots; thorax brown, legs and spurs pale yellow, base and apical of spurs dark brown; forewings pale yellow, veins color same as wings; hindwings pale color, veins brown. Abdomen yellowish brown, segment brown.

Head equal in width to pronotum (Fig. 15), anterior margin obtusely produced forward, vertex with ratio of length to width between eyes 0.7: 1.2; ocelli situated on anterior margin of vertex, distance between eye and ocellus longer than diameter of ocellus; frontoclypeus long and narrow, anteclypeus oblong, lightly widened basally, the edge of apex arched, together with the top of maxillary plate parallel. Pronotum about $4/3$ times as long as crown, width about 2 times as its median length, its anterior margin rounded, lateral margin short, posterior margin flat and straight; scutellum small, its median length as long as vertex; transverse depression straight, located on the upper side; forewings elongate, exceed the end of abdomen,

translucence, with 4 apical cells, appendix wide.

Male genitalia with lateral lobe of pygofer (Fig. 16) approximately squareness, outer margin expanded, with a group of setae, middle area with a dentated projection, its ventrolaterally margin with thick setae; subgenital plates (Fig. 17) triangular, uniseriate row of long setae ventrolaterally, narrowed gradually from base to finger-like curve apex; connective (Fig. 22) Y-shaped, its stem and arms of approximately equal length; style (Fig. 18) long and slender, apex finger-like; aedeagus (Figs. 19-21) expanded and rounded basally, apex third with two fork shape projections, the projections across near to apex and then detach.



Figs 8-14. *Macrostes latiaedagus* sp. nov. male, holotype. 8. Head and thorax, dorsal view. 9. Style, dorsal view. 10. Pygofer side, ventral view. 11. Aedeagus, ventral view. 12. Aedeagus, lateral view. 13. Connective, ventral view. 14. Subgenital plate, ventral view.

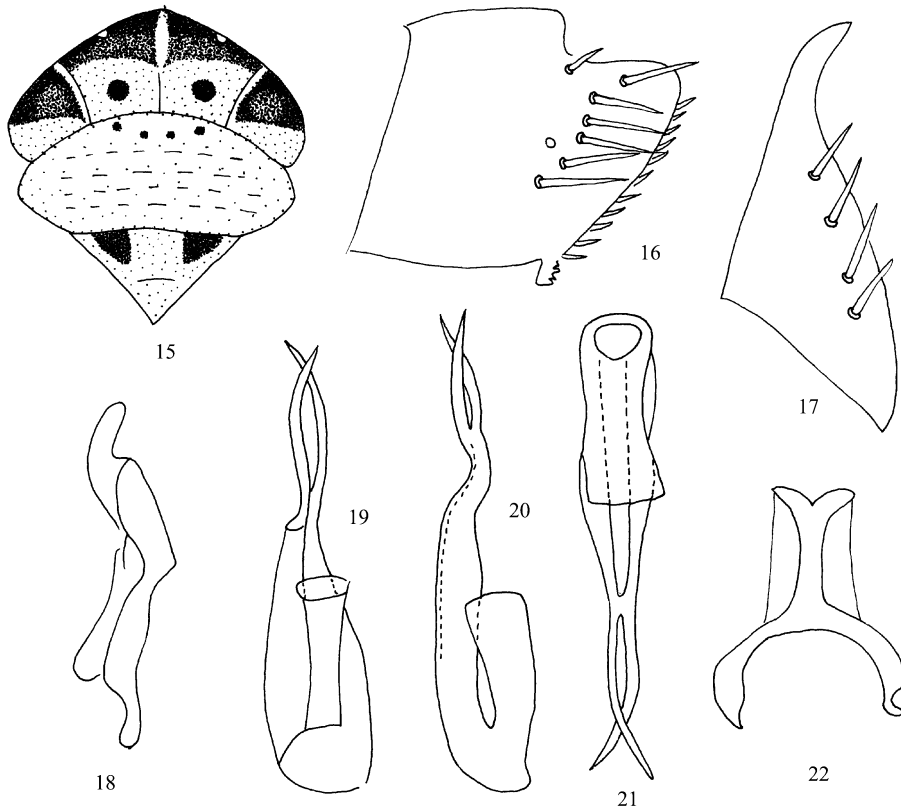
Female is similar to male in color, but forewings slightly dark, spurs of legs brown.

Holotype ♂, Xining (36.38° N, 101.48° E), 27 Aug. 1997, Qinghai, China, 2250 m, collected by LI Zi Zhong. Paratypes: 3 ♂♂, 2 ♀♀, same data as holotype.

Remarks. This new species is similar to *Macrostes brumescens* Anufriev in general appearance, but can be

distinguished from the latter by style long and slender; lateral lobe of pygofer approximately squareness, its outer margin with a dentated projection; aedeagus with two fork shape projections, apical third the projections across near to apex and then detach.

Etymology. From “br”, “two” and “maculata”, “fleck”, the specific epithet refers to crown with 2 round spots.



Figs 15 22. *Macrosteles bimaiculatus* sp. nov. male, holotype. 15. Head and thorax, dorsal view. 16. Pygofer side, ventral view. 17. Subgenital plate, ventral view. 18. Style, dorsal view. 19. Aedeagus, dorsal view. 20. Aedeagus, lateral view. 21. Aedeagus, ventral view. 22. Connective, ventral view.

REFERENCES

- Anufriev, G. A. 1968b. Cicads of the family Derbidae (Homoptera, Auchenorrhyncha) in the fauna of the USSR. *Entomol. Obozr.*, 47 (1): 133-146.
- Anufriev, G. A. 1968c. New and little known cicads of the genus *Macrosteles* (Homoptera, Auchenorrhyncha) of the Far East. *Zool. Zhurn.*, 47 (4): 555-562.
- Dai, R-H, Li, Z Z and Chen, X-X 2006. One new genus and species of Euscelinae (Homoptera, Cicadellidae) from Guizhou, China. *Acta Zootaxonomica Sinica*, 31 (3): 592-594. [动物分类学报]
- Hamilton, K. G. A. 1983. Introduced and native leafhoppers common to the old and new worlds (Rhynchota: Homoptera: Cicadellidae). *Can. Ent.*, 115: 478-509.
- Ishihara, T. 1953. Some new genera including a new species of Japanese Deltocephalidae (Homoptera). *Trans. Shikoku Ent. Soc.*, 3 (8): 56-89.

- Ishihara, T. 1966. Homoptera of the kurile islands. *Trans. Shikoku Ent. Soc.*, 9 (2): 37-38.
- Jacobi, A. 1944. Die Zikadenfauna der Provinz Fukien in Sudchina und ihrer geographischen Beziehungen. *Munchen Ent. Gesell. Mitt.*, 34: 5-66.
- Kuoh, Z L 1981. Homoptera, Cicadellidae, Insects of Xizang 1 (10): 217-218.
- Kuoh, Z L and Lu, Z Q 1986. A new leafhopper injurious to water caltrop (Homoptera: Cicadellidae). *Entomotaxonomia*, 8 (1): 121-124.
- Li, Z Z and Wang, L M 1991. Agricultural and Forestry Insect Fauna in Guizhou. 4: 183-184.
- Matsumura, S. 1910. Die Jassinen und einige neue Acocephalinen Japans. *J. Coll. Agr.*, 5: 167-339.
- Razvjazkina, G. M. 1957. New and little known species of the genus *Macrosteles* (Homoptera: Cicadoidea). *Zool. Zh.*, 36 (4): 521-528.
- Zeybekoglu, U. 1993. A taxonomical study on the species of the genus *Macrosteles* Fieber, 1866 (Homoptera, Cicadellidae, Deltocephalinae) occurring in the Central Black sea region. *Doga Turk Zooloji Dergisi*, 17 (3): 355-366.

中国二叉叶蝉属三新种记述 (半翅目, 叶蝉科, 殃叶蝉亚科)

戴仁怀^{1,2} 李子忠¹ 陈学新²

1. 贵州大学昆虫研究所 贵阳 550025
2. 浙江大学植物保护系 杭州 310029

摘要 记述二叉叶蝉属 *Macrosteles* Fieber 3 新种, 即西藏二叉叶蝉 *Macrosteles tibetensis* sp. nov. 与 *M. heiseles* Kuoh 外形相似, 主要区别在于新种下生殖板端部细, 且弯曲, 端部外缘锯齿状。新种宽胫二叉叶蝉 *Macrosteles latiaaleagus* sp. nov. 与 *M. vilbastei* Hamilton 外形相似, 与后者区别在于: 1) 个体明

关键词 半翅目, 叶蝉科, 殃叶蝉亚科, 二叉叶蝉属, 新种。
中图分类号 Q969.35

显大; 2) 阳茎基部管状弯曲, 端区分叉较宽。双斑二叉叶蝉 *Macrosteles bimaculatus* sp. nov. 与 *M. brunescens* Anufriev 相似, 不同点在于: 1) 阳基侧突细长; 2) 尾节侧瓣近似方形, 外缘突起锯齿状; 3) 阳茎于端部 1/3 处分为二叉, 此二叉又于叉的近端部相交叉而后分开。